

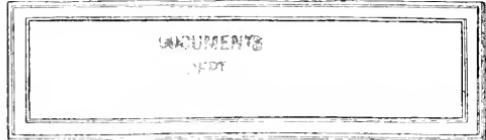
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DEPARTMENT OF COMMERCE

BUREAU OF NAVIGATION

# REGULATIONS

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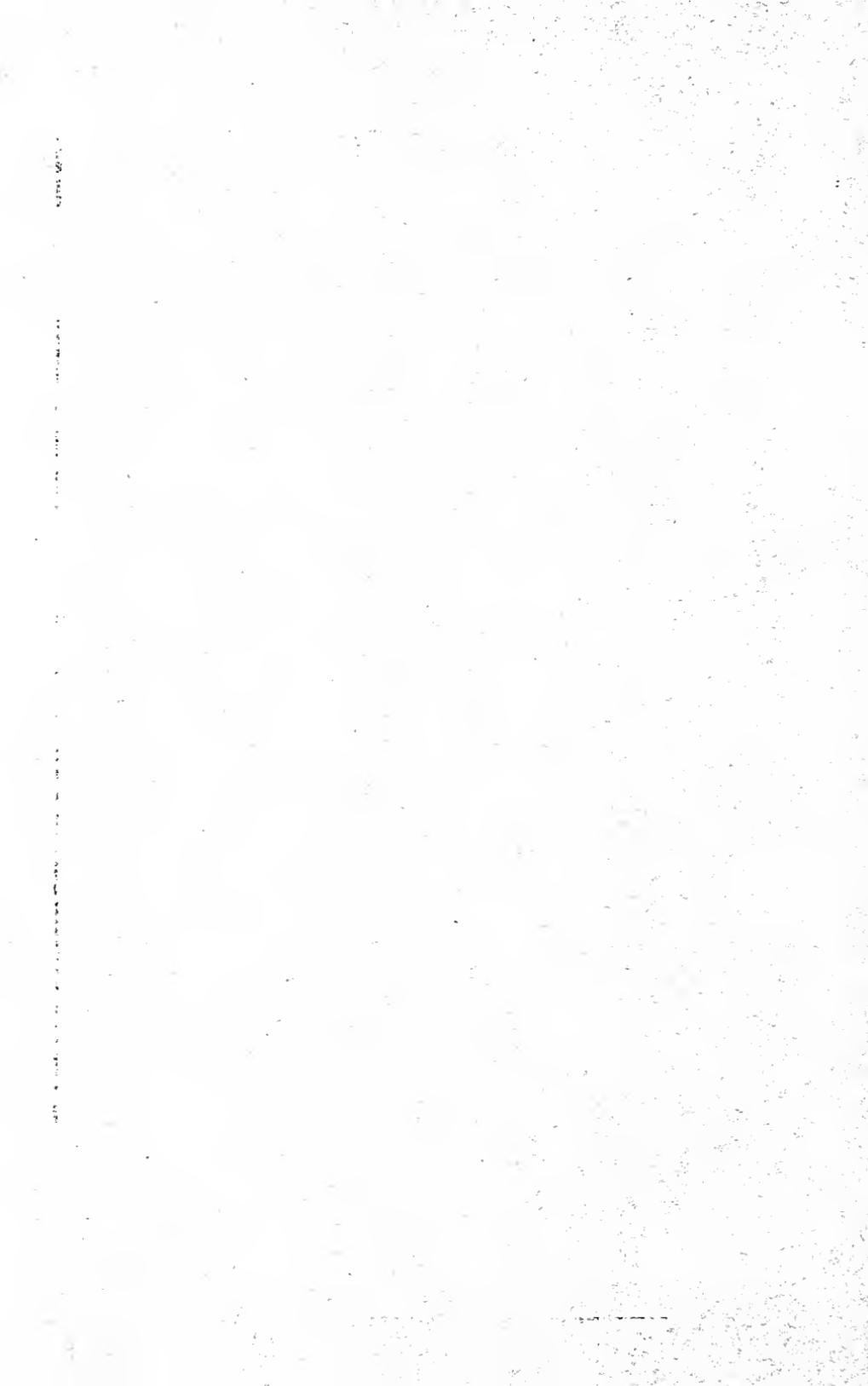
# RADIO COMMUNICATION



EDITION JULY 1, 1913



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1913



DEPARTMENT OF COMMERCE

*U.S.* BUREAU OF NAVIGATION

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# REGULATIONS GOVERNING RADIO COMMUNICATION.

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DEPARTMENT OF COMMERCE,  
OFFICE OF THE SECRETARY,  
Washington, July 1, 1913.

*To owners and operators of apparatus for radio communication  
(wireless telegraphy):*

The attention of all owners and operators of apparatus for radio communication is invited to the act of August 13, 1912, to regulate radio communication and to the following regulations to carry out that act and the International Radiotelegraphic Convention, proclaimed by the President of the United States.

The Department "Regulations for Radio Apparatus and Operators on Steamers" include the laws applying to radio equipment on ships, and its provisions should be known to all owners and operators of ship radio sets. Owners and operators may obtain copies of the act, the international convention in force, and the "Regulations for Radio Apparatus and Operators on Steamers" from the Commissioner of Navigation, Department of Commerce, Washington, D. C., or from the radio inspectors for the districts named below.

The act to regulate radio communication took effect December 13, 1912. It requires the owners and operators of apparatus for radio communication under certain conditions to obtain licenses.

The regulations established by the act, or by the authority of the act, or of the international convention, will be enforced by the Secretary of Commerce through radio inspectors, collectors of customs, and other officers of the Government.

Violations of the act and regulations will be reported to the chief customs officer of the district in which the offense occurs, who will report the case to the Secretary of Commerce (Bureau of Navigation) according to the procedure followed in violations of the navigation laws.

## ADMINISTRATIVE DISTRICTS.

The Department has established, for the purpose of enforcing through radio inspectors the acts relating to radio communication and the international convention, the following districts with the principal office for each district at the customhouse of the port named:

1. BOSTON, MASS. —————— Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.
2. NEW YORK, N. Y. —————— New York (county of New York, Staten Island, Long Island, and counties on the Hudson River to and including Albany, Rensselaer, and Schenectady), and New Jersey (counties of Bergen, Passaic, Essex, Union, Middlesex, Monmouth, Hudson, and Ocean).

3. BALTIMORE, MD.-----New Jersey (all counties not included in second district), Pennsylvania (counties of Philadelphia, Delaware, all counties south of the Blue Mountains, and Franklin County), Delaware, Maryland, Virginia, District of Columbia.
4. SAVANNAH, GA-----North Carolina, South Carolina, Georgia, Florida, Porto Rico.
5. NEW ORLEANS, LA-----Alabama, Mississippi, Louisiana, Texas, Tennessee, Arkansas, Oklahoma, New Mexico.
6. SAN FRANCISCO, CAL.-----California, Hawaii, Nevada, Utah, Arizona.
7. SEATTLE, WASD-----Oregon, Washington, Alaska, Idaho, Montana, Wyoming.
8. CLEVELAND, OHIO-----New York (all counties not included in second district), Pennsylvania (all counties not included in third district), West Virginia, Ohio, Michigan (Lower Peninsula).
9. CHICAGO, ILL-----Indiana, Illinois, Wisconsin, Michigan (Upper Peninsula), Minnesota, Kentucky, Missouri, Kansas, Colorado, Iowa, Nebraska, South Dakota, North Dakota.

A radio inspector is authorized in exceptional cases to act outside of his district for the convenience of commerce. In such cases he will communicate before or after acting with the inspector in whose district he has acted. Radio inspectors are authorized to communicate directly with collectors of customs and to cooperate with them in the enforcement of the law.

#### EXAMINATION OF OPERATORS FOR LICENSES.

The examination of operators for licenses prescribed in the following regulations will be held at the United States navy yards at Boston, Mass. Brooklyn, N. Y., Philadelphia, Pa., Washington, D. C., Norfolk, Va., Charleston, S. C., New Orleans, La., Mare Island (San Francisco), Cal., Puget Sound, Wash.; at the naval stations at Key West, Fla., San Juan, P. R., Colon, Panama, and Honolulu, Hawaii; at the Naval Academy, Annapolis, Md.; at Fort Sam Houston, San Antonio, Tex., Fort Wood, New York Harbor, Fort Omaha, Nebr., Fort Leavenworth, Kans.; at the School for Enlisted Specialists, Fort Monroe, Va.; at the Army stations at St. Michael and Fairbanks, and by special arrangements at the Army stations at Fort Gibbon and Valdez, Alaska; also at the Bureau of Standards, Washington, D. C.; and by the Department's radio inspectors at the customhouses in their districts and elsewhere by arrangement with them. Applicants for licenses should communicate in writing [Form 756] with the commandants or commanding officers of the navy yards or Army posts or Naval or Army stations named, or with the Director of the Bureau of Standards, or with the radio inspectors at the customhouses, at their headquarters, to ascertain the day and hour when they can be examined. Additional opportunities for examination can be ascertained by communicating with the Department's radio inspectors at the customhouses. The licenses to operators will be delivered at the places of examination.

The license provides that the holder shall take the oath for the preservation of the secrecy of messages before a notary public or officer authorized to administer oaths. The operator's license is not valid until this oath is executed.

## REGULATIONS.

### Part I. LICENSES—APPARATUS.

#### A. APPARATUS EXEMPT FROM LICENSE.

The act does not apply either afloat or ashore to—

(a) Apparatus for radio communication which merely receives radiograms and is not equipped for sending.

(b) Apparatus for the transmission of radiograms exclusively between points in the same State, if the effect of such transmission does not extend beyond the State (so as to interfere with the radio communication of other States), or if the effect of such transmission does not interfere with the reception of radiograms from beyond the State (so as to interfere with the interstate radio communication of that State).

(c) Apparatus for radio communication which has been issued to the Organized Militia by the War Department or to the Naval Militia by the Navy Department and is used for official purposes only.

The owner or operator of any apparatus who may be in doubt whether his apparatus, under this paragraph, is exempt from license may write the facts to the radio inspector for his district before applying for a license.

#### B. SHIP STATIONS.

The apparatus for transmission of radiograms, or signals on any vessel of the United States not permanently moored, requires a license.

For the purposes of the administration of the act, ship stations on vessels of the United States shall be of these classes:

*Class A.*—Ocean and Great Lakes passenger steamers subject to the act of July 23, 1912, and required to carry two operators and maintain a constant skilled watch.

*Class B.*—Cargo steamers with crews of 50 or more, required to carry two operators, the second of whom may be a member of the crew certified as competent to receive distress calls, etc., maintaining a transmitting service during limited hours but a constant receiving watch.

*Class C.*—Vessels voluntarily equipped with radio apparatus and not subject to the act of June 24, 1910, as amended July 23, 1912, with no fixed hours of service, such as—

1. Passenger steamers, where the licensed capacity and number of crew combined are less than 50.

2. Cargo steamers with crews less than 50.
3. Tugs and towing steamers, etc., with crews less than 50.
4. Motor vessels.
5. Sailing vessels and barges.
6. Yachts.
7. Steamers of any kind plying between ports or places less than 200 miles apart.

### C. LAND STATIONS.

Apparatus for radio communication on land within the jurisdiction of the United States (excluding the Philippine Islands and excluding apparatus of the Government of the United States) must be licensed if—

- (a) The apparatus is a means of commercial intercourse among the several States or with foreign nations; or
- (b) The apparatus transmits radiograms or signals the effect of which at any time extends beyond the State; or
- (c) The apparatus interferes with the receipt of messages in any State from beyond such State.

For the purposes of the administration of the act, stations on land are divided into two general descriptions, according to geographical location:

I. COAST OR SHORE STATIONS are stations which transmit messages to vessels at sea or on the Great Lakes or whose operations can affect the transmission of messages between ship and ship, or ship and coast. Vessels of the United States permanently moored are classed as coast stations under the International Convention.

II. INLAND STATIONS are stations which can not transmit messages to vessels at sea or on the Great Lakes and whose operations can not affect the transmission of messages between ship and ship, or ship and coast. This may be due to their geographical location or to their range, dependent on power and aerial, or conditions. In some instances actual inspection may be necessary to determine whether a station should be licensed as a coast station or an inland station.

An operator or owner in doubt as to the classification of his station should communicate the facts to the radio inspector of his district when applying for a license.

As the means for enforcing the radio laws are limited, it is necessary to give ship and commercial stations precedence over amateur stations. The owner of an amateur station may operate his station in accordance with the laws if his application for a license has been properly filed but has not been acted upon. An application for an operator's license must also have been filed and every effort made to obtain the license before the station may be operated.

"Provisional" station licenses are issued to amateurs remote from the headquarters of the radio inspector of the district in which the station is located. These licenses are issued as a matter of convenience and record. If, upon inspection, the station is found to comply with the law, the inspector will strike out the word "Provisional" and insert the date of inspection and his signature at the bottom of the license.

If such a station is found not to comply with the law, the provisional license may be canceled until such time as the apparatus is readjusted to meet the requirements of the law: *Provided, however,* that consideration will be given to any reports of interference filed against such a station.

#### CLASSES OF LAND STATIONS.

Both coast stations (the words "coast stations," "shore stations," and "coastal stations" are used interchangeably) and inland stations are divided for the purposes of the administration of the act into the following classes:

1. Public-service stations, (a) general, (b) limited.
2. Limited commercial stations.
3. Experiment stations for the development of radio communication.
4. Technical and training school stations.
5. General amateur stations.
6. Special amateur stations.
7. Restricted amateur stations.

#### DESCRIPTION OF CLASSES.

1. (a) *Public-service stations, general*, are those open to general business between coast and ships or between land stations, and include those operated by common carriers under the act of February 4, 1887, to regulate commerce, amended June 18, 1910. They are required to maintain a constant receiving service when open. Every coastal station open to public service shall at all times be ready to receive messages of such wave lengths as are required by the international convention in force. (Sec. 4, first regulation, act of Aug. 13, 1912.)

Whenever such stations do not insure a constant service, transmitting and receiving day and night without interruption, the Secretary of the Navy is directed to open naval radio stations within 100 miles thereof to public business. (Sec. 4, eighteenth regulation, act of Aug. 13, 1912.) The Secretary of War is authorized by the act of May 26, 1900 (31 Stat. 206), to open Alaskan military stations to public service.

1. (b) *Public-service stations, limited*, are reserved for a limited public service, determined by the object of the correspondence or other circumstances independent of the system employed. Stations of this class transmit and receive public messages to and from certain stations only, which are designated in the license.

2. *Limited commercial stations* are not open to public service and are licensed for a specific commercial service or services defined in the license. Stations of this class must not transmit to or accept public messages from other stations.

3. *Experiment stations*.—The Secretary of Commerce is authorized by section 4 of the act to grant special temporary licenses "to stations actually engaged in conducting experiments for the development of the science of radio communication, or the apparatus pertaining thereto, to carry on special tests, using any amount of power or any wave lengths, at such hours and under such conditions as will

insure the least interference with the sending or receipt of commercial or Government radiograms, of distress signals and radiograms, or with the work of other stations." Applicants for such licenses should state any technical result they have already produced, their technical attainments, etc. The fact that an applicant desires to experiment with his equipment does not justify or require a license of this class. Most experiments can be made within the limitations of general and restricted amateur station licenses or by use of an artificial antenna to prevent radiation.

4. *Technical and training school stations* will be licensed in a separate class, according to the degree of technical training attained and imparted and to local conditions.

5. *General amateur stations* are restricted to a transmitting wave length not exceeding 200 meters and a transformer input not exceeding 1 kilowatt. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

6. *Special amateur stations* may be licensed by the Secretary of Commerce to use a longer wave length and a higher power on special application to the Secretary of Commerce. Applications for this class from amateurs with less than two years' experience in actual radio communication will not be approved. The application must state the experience and purpose of the applicant, the local conditions of radio communication, especially of maritime radio communication in the vicinity of the station, and a special license will be granted only if some substantial benefit to the art or to commerce apart from individual amusement seems probable. (Sec. 4, fifteenth regulation, act of Aug. 13, 1912.)

7. *Restricted amateur stations*, within 5 nautical miles of a naval or military station, are restricted to a wave length not exceeding 200 meters and to a transformer input not exceeding one-half kilowatt. (Sec. 4, sixteenth regulation, act of Aug. 13, 1912.)

*Special stations for exceptional distances* are land stations designed (coast) to carry on transoceanic radio communication as between the United States and European countries, or between the Pacific coast and Hawaii, or from the United States over similar long distances at sea to another land station, or (inland) to carry on radio communication overland over exceptional distances. These stations will all come under one of the classifications named above and the license will indicate the stations for which communication is authorized and indicate the range.

General public service, limited public service, limited commercial, special amateur, and special stations which come under the classification of coast stations are subject to the same requirements as to the provision for receiving and relaying distress calls.

Stations operated at different portions of the day for different purposes will require licenses covering each purpose; that is, a station used during the day for limited commercial purposes and during the night for general public service will require two licenses.

## Part 2. LICENSES—OPERATORS.

The third section of the act prescribes that every radio apparatus required to be licensed shall at all times while in use and operation be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce.

Licenses approved and issued by the Secretary of Commerce to operators will be delivered to applicants after passing examinations given by the officers named under the head "Examination of operators for licenses."

[NOTE.—*Apprentices*.—Under the supervision of a licensed operator an apprentice or unlicensed person may learn the art by the actual use of the apparatus, but the licensed operator who fails to enforce obedience to the regulations by the apprentice or unlicensed person serving under his supervision is liable to penalties as if he had himself violated the regulations.]

Operators' licenses are divided into the following grades:

I. Commercial :

1. First grade.
2. Second grade.
3. Cargo grade.
4. Extra grade.
5. Temporary permit.

II. Amateur :

6. First grade.
7. Second grade.

III. Technical :

8. Experiment and instruction grade.

The requirements which applicants must meet to secure licenses of the several grades and the scope and limitations of employment authorized by the licenses of the several grades are as follows:

### I. COMMERCIAL.

*First grade*.—The applicant must pass a satisfactory examination in—

(a) The adjustment, operation, and care of the apparatus, including correction of faults and change from one wave length to another.

(b) Transmitting and receiving by ear at a speed of not less than 20 words a minute in Continental Morse (five letters to the word).

(c) Use and care of storage battery or other auxiliary power apparatus.

(d) Knowledge of the international regulations in force applying to radio communication.

(e) Knowledge of the requirements of the acts of Congress to regulate radio communication—sections 3, 4, 5, 6, and 7 of the act of August 13, 1912. No stated experience is required, but the examination given is such that a person must be familiar with all parts and principles embodied in a ratio set and auxiliary power apparatus used, to obtain a license.

(1) The commercial first-grade license qualifies the operator for employment at any ship or land station of any class and is the highest certificate indicative of ability as radio operator issued at this time.

(2) Every ship station of class A must carry two or more operators, at least one of whom must have a valid commercial first-grade license, or, in the case of a foreign ship, have an equivalent foreign license.

[NOTE.—The requirements for this grade are the same as the international requirements imposed on operators of foreign ships by international regulation, except the knowledge of the use and care of storage battery or other auxiliary and of the act of August 13, 1912. Inspectors will allow a reasonable time to foreign operators on foreign ships to meet the additional requirements, supplying them as promptly as practicable with copies of the act of August 13, 1912.]

(3) Every ship station of class A on a steamer carrying 100 or more passengers, and under the London convention vessels having constant service, must carry at least two operators having commercial first-grade licenses.

(4) Every land station open to general public service must have at least one commercial first-grade operator.

(5) Every coast station of class 1 must have commercial first-grade operators.

*Second grade.*—The applicant must pass a satisfactory examination in all the subjects prescribed above for the first grade, with the exception that the minimum speed in transmitting and receiving shall not be less than 12 words a minute in Continental Morse, and the examination in the subjects will not be as comprehensive as that given first-grade operators.

(1) An operator licensed as commercial second grade, on subsequent compliance with the speed test for the first grade, and further examination on the subjects named, may have his license raised to the first grade by the indorsement in red ink on the face of his license "Examined on [date] at [place] and passed first grade by [examining officer's signature]," or a first-grade license may be issued.

(2) Every ship station under class A (except steamers carrying 100 or more passengers) must carry a second operator, having the commercial second-grade license, or higher.

(3) Every ship station under classes B and C must carry at least one operator licensed as commercial second grade, or higher.

(4) Every coast station of classes 2 and 6 must have at least one operator holding a valid commercial second-grade license.

*Cargo grade.*—Section 2 of the act of July 23, 1912, provides:

On cargo steamers, in lieu of the second operator provided for in this act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch so far as required for the safety of life.

The examination will be conducted so as to determine the following facts:

(1) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the distress signal (SOS), when included in a list of other words or signals sent slowly. (Approximately five words a minute.)

(2) That the applicant is sufficiently familiar with the Continental Morse Code to recognize the radio call letters of the vessel on which he desires to operate when sent slowly and repeated several times.

(3) That the applicant is sufficiently familiar with the type of the receiving apparatus of the vessel on which he desires to operate to determine by a buzzer or similar test that the detector or receiving apparatus is properly adjusted to receive signals.

Examining officers and radio inspectors are authorized to issue a certificate, in the form of an amateur first-grade license, after examination, to indicate the facts above enumerated in the case of a member of the crew or other person, and experience under this form will be credited by examining officers if the holder later applies for examination for a commercial license. These licenses will be marked "Cargo" in the upper right-hand corner under the serial number.

*Extra grade.*—The Department desires to establish, if practicable, a corps of specially trained and trustworthy radio operators who may be available for Government service. For this purpose a special license will be issued to operators holding the commercial first-grade license, whose certificates of skill in radio communication, issued under the act of June 24, 1910, and licenses under this act record 12 months' satisfactory ocean service as shown by masters' indorsement. A special examination in the radio regulations of the United States Navy will also be required. The commercial extra-grade license will be issued during 1913, and will be the subject of a special circular.

*Temporary permit.*—Section 3 of the act of August 13, 1912, provides:

In case of emergency the Secretary of Commerce may authorize a collector of customs to issue a temporary permit, in lieu of a license, to the operator on a vessel subject to the radio ship act of June 24, 1910.

The temporary permit is to be issued only in cases of emergency and will be valid for only one voyage. The collector will report in each case to the Commissioner of Navigation the circumstances which rendered necessary the issue of a temporary permit.

Radio operators holding licenses of any grade or class and applying for examination for any other grade or class must submit to the examining officer an additional form No. 756, in duplicate. If a new license is issued, the license held by the applicant must be surrendered.

## II. AMATEUR.

*General.*—Amateurs, before applying for licenses, should read and understand the essential parts of the International Radiotelegraphic Convention in force and sections 3, 4, 5, and 7 of the act of August 13, 1912. The Department recognizes that radio communication offers a wholesome form of instructive recreation for amateurs. At the same time, its use for this purpose must observe strictly the rights of others to the uninterrupted use of apparatus for important public and commercial purposes. The Department will not knowingly issue a license to an amateur who does not recognize and will not obey this principle. To this end the intelligent reading of the international convention and the act of Congress is prescribed as the first step to be taken by amateurs. Copies of the two publications may be secured for this purpose from the Department's radio inspectors or from the Commissioner of Navigation, but they are not for public distribution.

*First grade.*—The applicant must have a sufficient knowledge of the adjustment and operation of the apparatus which he wishes to operate, and of the regulations of the international convention and acts of Congress in so far as they relate to interference with other radio communication and impose certain duties on all grades of operators. The applicant must be able to transmit and receive in Continental Morse, at a speed sufficient to enable him to recognize distress calls or the official "keep-out" signals. A speed of at least five words per minute (five letters to the word) must be attained. Applicants for licenses of this grade residing at or near any place where examinations are held will communicate with examining offi-

cers and will be examined for licenses of amateur grades. At places remote from examining officers, applicants will file applications with the radio inspector, who will endeavor to arrange for examinations on his inspection trips.

*Second grade.*—The requirements for the second grade will be the same as for the first grade. The second-grade license will be issued only where an applicant can not be examined or until he can be examined. An examining officer or radio inspector is authorized in his discretion to waive an actual examination of an applicant for an amateur license, if the amateur for adequate reasons can not present himself for examination but in writing can satisfy the examining officer or radio inspector that he is qualified to hold a license and will conform to its obligations.

### III. TECHNICAL.

*Experiment and instruction grade.*—The operator's license for this grade is a commercial license, indorsed by the Secretary of Commerce with a statement of the special purposes for which it is valid. It should be forwarded to the Commissioner of Navigation with a recommendation, if practicable, from a radio inspector or examining officer.

Experimenters and instructors, of scientific attainments in the art of radio communication, whose knowledge of the radio laws satisfies the radio inspector or the examining officer, may obtain this grade licenses, provided they are able to transmit and receive in the Continental Morse Code at a speed sufficient to enable them to recognize distress calls or the "keep-out" signals.

This license has no reference to the instruction of radio operators as such, but is required by those operating apparatus licensed as experimental stations but who are unable to obtain commercial-grade operators' licenses.

### Part 3. APPLICATIONS FOR LICENSES.

Station licenses for the use and operation of apparatus for radio communication under the act may be issued only to citizens of the United States or Porto Rico or to a company incorporated under the laws of some State or Territory or of the United States or Porto Rico.

Licenses can be issued to clubs if they are incorporated or if a member will accept the responsibility for the operation of the apparatus, carrying with it the possibility of being penalized for infraction of the laws.

#### I. SHIP STATIONS.

Applications for licenses for ship stations should be addressed to the radio inspector for the district including the port whence the vessel usually departs.

The application by the company operating the apparatus should state the name of the ship in respect of which the license is required. The radio inspector will then issue the Department's blank form of application for license to be filled in by the applicant and returned

to the radio inspector with a statement when the ship will be in port and its radio apparatus may be thoroughly inspected.

## II. LAND STATIONS.

*Coast stations.*—The several classes of coast stations will be licensed, for reasons already assigned, in advance of inland stations.

Applications for licenses for coast stations should be addressed to the Department's radio inspector for the district in which the station is located, who will forward the application Form 757.

All land stations, except general and restricted amateur stations, should state their location in latitude and longitude to seconds.

The application will state the class of the station for which a license is desired, with particulars to show its proper classification, approximate transmitting range with a similar station, and precise location (State, county, city, or town, street and number, or, if outside of city or town limits, as exact a description of its locality as may be). A blank form for apparatus will be sent when Form 757 has been filed, and arrangements made for inspection if necessary. Requests for licenses for coast stations will be taken up in the order of classes, as indicated above, and in the order of date received only so far as the relative importance of stations will permit. Amateur applicants who state that they have read the International Radiotelegraphic Convention in force and the act of August 13, 1912, will receive attention before those who have not.

*Inland stations.*—The issue of licenses to inland stations, as already defined, will be taken up after ship and coast stations. The procedure for application for license will be the same as for coast stations.

## III. FORMS.

(a) The several forms of applications and licenses for operators will be issued through examining officers (through the War and Navy Departments) and radio inspectors. The licenses will be numbered serially.

(b) The forms and licenses for stations and apparatus will be issued through radio inspectors. Licenses for general and restricted amateur stations are issued by them direct to applicant. Station licenses of all other classes are issued from the office of the Commissioner of Navigation, Department of Commerce.

## IV. COMMERCIAL OPERATORS.

Applications for operators' licenses of the several commercial grades should be addressed to the nearest examining officer or radio inspector, who will arrange for examinations. Where the applicant is not within reasonable distance of an examining officer or radio inspector he may forward his application with a statement of the facts.

Commercial licenses can only be obtained by examination. Where applicants are at remote points or can not proceed to examining offices efforts will be made to examine them through radio inspectors when they are in that vicinity, but special trips can not be made for that purpose.

## V. AMATEUR OPERATORS.

(a) Amateurs in the seaboard States should write to the nearest examining officer in their vicinity for Form 756 (application for operator's license) and to the radio inspector in their vicinity for Form 757 (application for license for land station). If the application for operator's license is also made to the radio inspector, both applications should be forwarded in the same envelope.

(b) Amateur operators at points remote from examining officers and radio inspectors will be issued second-grade amateur licenses without examination, as explained previously. Examinations for first-grade licenses will be given by the radio inspector when he is in that vicinity, but special trips can not be made for this purpose.

### Part 4. GENERAL OBSERVATIONS.

1. An operator's license may be granted to any person without regard to sex, nationality, or age if the applicant can fulfill the requirements for the class of license desired.

2. No stated experience is required. The examinations for the different grades are such as require a proper amount of experience to pass.

3. The service regulations of the radiotelegraphic convention in force provides that "no station on shipboard shall be established or worked by private enterprise without authority from the Government to which the vessel is subject." Such authority shall be in the nature of a license issued by said Government. Stations on foreign ships will be licensed by their Governments, respectively. Inspectors will report to the Commissioner of Navigation stations on foreign ships not so licensed.

4. The list of land and ship stations of the United States, including amateurs, giving call letters, wave lengths, nature of service, etc., can be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., upon prepayment of 15 cents.

The International List of Radio Stations of the World can be procured from the International Bureau of the Telegraphic Union (Radiotelegraphic Service), Berne, Switzerland. The price is 60 cents per copy, not including postage. The rates of postage are as follows: One copy, 24 cents; two copies, 32 cents; three or four copies, 48 cents. A subscription of 80 cents additional procures all supplements, postpaid, as issued from time to time until the next International List is published in the autumn of 1914. The stations of the United States are published in the first supplement.

Applications for the International List of Call Letters (stations of the world) should also be addressed to the International Bureau at Berne. The price is 36 cents per copy, including postage. A subscription of 80 cents additional procures all supplements, postpaid, as issued until July, 1916. Remittances to Berne should be made in the form of postal money orders.

5. Operator's licenses should be framed and posted in the radio room, and licenses for stations should be accessible at all times to inspectors.

6. Operator's licenses should indicate on their face that the oath has been executed. This statement should be signed by a notary public.

7. Stations equipped to receive only do not require a license.

8. No fees are charged for any operator or station license.

9. Licensed stations require licensed operators.

10. Amateur stations within 5 miles of naval or military stations need not have been in actual operation on or before August 13, 1912, to obtain a license for a restricted amateur station.

11. Any person applying for a duplicate license to replace an original which has been lost, mutilated, or destroyed will be required to submit an affidavit to the Bureau of Navigation through the radio inspector or examining officer issuing the original, attesting the facts regarding the manner in which the original was lost, mutilated, or destroyed.

The Commissioner of Navigation will consider the facts in the case and advise the radio inspector or examining officer in regard to the issue of a duplicate license. A duplicate license will be issued under the same serial number as the original and marked "Duplicate" in red across the face.

12. These instructions may be amended and supplemented from time to time.

E. T. CHAMBERLAIN,  
*Commissioner of Navigation.*

Approved:

EDWIN F. SWEET,  
*Assistant Secretary.*

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